Optimasi Produksi Bioetanol Kulit Bawang Putih Ditinjau dari Pengadukan dan Nisbah Ko-Kultur Ragi

(*Bioethanol Production Optimation from Garlic Skin as Revealed by Stirring and Yeast Co-Culture Ratio* ***)***

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ABSTRACT

The objective of this study is to produce optimal bioethanol from garlic skin as revealed by stirring and yeast co-culture ratio, and interaction between both. Data were analyzed by 4x2 Factorial Design and Randomized Completely Block Design (RCBD) with 4 replications. As the first factor is the ratio of tapai yeast and bread yeast which are (% v/v): (7,5 : 7,5) , (10 : 5), (15 : 5) and (20 : 5), respectively. The second factors are processing with and without stirring, while as the block is the time analysis. Fermentation process was done in room temperature by tapai yeast addition first, then after 24 hours bread yeast was added and the fermentation continued until 72 hours. To test the differences between treatments means, the Honestly Significant of Differences (HSD) were used at 5% level of significant.

The results of the study showed that the yeast co-culture ratio of (15 : 5) tapai yeast and bread yeast with stirring process will produce the optimal yield of bioethanol which is 21,38 ± 0,23% with concentration 7,43 ± 0,07 %, higher than without stirring process which is 18,58 ± 0,49% with concentration 6,36 ± 0,09 %. Bioethanol from garlic skin producct has fulfilled SNI 7390:2012 about denaturated bioethanol for gasohol.

Keywords : Bioethanol, co-culture ratio, garlic skin, stirring.